

ABSTRACT OF THE DISCLOSURE

The invention is directed to isolated protein fragments of p62 nucleoporin including deletion isoforms and nucleic acid sequences encoding these deletion isoforms. The isolated deletion isoforms disclosed herein include the sequences: SEQ. ID NO.:1 MSGFNFGGTG APTGGFTFGT

AKTATTTTPAT GFSFSTSGTG GFNFGAPFQP ATSTPSTGLF SLATQTPATQ TTGFTFGTAT LASGGTGFSL
GIGASKLNLS NTAATPAMAN PSGFGLGSSN LTNAISSTVT SSQGTAPTGF VFGPSTTSVA PATTSGGFSF
TGGSTAQPSG FNIGSAGNSA QPTAPATLPF TPATPAATTA GATQPAAPTP TATITSTGPS LFASIATAPT
SSATTGLSLC TPVTTAGAPT AGTQGFSLKA PGAASGTSTT TSTAATATAT TTTSSSTTGF ALNLKPLAPA
GIPSNTAAAV TAPPGPGAAA GAAASSAMTY AQLESLINKW SLELEDQERH FLOQATQVNA WDRTLIEGE
KITSLHREVE KVKLDQKRLD QEL; SEQ ID NO.:2 LINKWSLELE DQERHFLQQA TQVNAWDRTL

IENGEKITSL HREVEKVKLD QKRLDQELDF ILSQQKELED LLSPLEELVK EQRATIYLQH ADEERQKTYK
LAENIDAQLK RMAQDLKDII EHLNTSGAPA DTSDDLQIC KILNAHMDSL QWIDQNSALL QRKVEEVTKV
CVGRRKEQER SFRITFD. The invention is also directed to peptides which are at least 80%

identical over their entire amino acid sequence set forth in SEQ ID NO:1, and SEQ ID NO:2 and salts thereof. Pharmaceutical compositions including the polypeptides, their isoforms, and methods for their use activating target genes are also provided.